

Kuwait Gypsum Ceilings

PRODUCT DATASHEET

ZODIAK –Acoustical Ceilings Systems

Unique High Quality T-Grid Ceiling Unites,
Combining the ultimate quality of GRG material with the High Features levels of the
Acoustical systems.

Manufactured in accordance with international standards:

European Standard No. EN-14246

British Standard No. BS-476

Approved under GCC Standard No. GSO EN 14246:2011

Approved under the Kuwaiti Standard No. KWS GSO EN 14246:2017

Provides Modern, Healthy and effective comfortable living environment,
Applicable at Offices, Education Buildings (Schools, Institutes, Universities,,),
Hospitals, Commercial Buildings and wherever needed to benefit from the acoustical
features.

Zodiak Ceiling Units include:

- Semi-Perforated Types (6 different designs)
- Full Perforated High NRC Type (CAIRO)

Product Technical Data:

Properties:

Zodiak® Ceilings Units are manufactured from high grade gypsum powder, double reinforced with GlassFiber material for high performance levels, offers Durable, Workable, Practical and Decorative solutions for ceilings in different building areas, with excellent resistance to fire and high acoustic absorption in addition to healthy features.

Dimensions: 590X590X22/29 ± 3 mm. (mean thickness on the edge: 12.3/18 mm) as per BS EN 14246:2006 Standard
Custom thicknesses and dimensions are available.

Mass per Surface Unit (Weight): standard procedure of BS EN 14246:2006 was applied, Avg. mass of individual Gypsum unit: 3.88 (K.gs) for the Zodiak acoustical type.

Surface: flat Decorative, perforated and semi-perforated types (variety of designs).

Finish: White color, Antibacterial pre-painted units (Can be painted with Hundreds of colors), ready for installation directly, and no additional coating is required, unless specified.

Combustibility:

Zodiak® Ceiling units are rated Non-Combustible as defined in BS 476.

Surface spread of flames:

Zodiak® Ceilings units are rated Class 1 for surface spread of flames as defined in BS 476.

Fire Propagation:

Tested to BS 476: Part 6:1989, Zodiak® Ceiling tiles achieved a final index of 1.4 indicating a Class 0 material in accordance with Appendix A, Clause A12 of the Approved Document B to the Building regulations 1991

Fire Ignitability:

Tested under the BS 476, part 12, and resulted to:

- Did not catch fire
- No Smoke developed
- No Glow and debris separation

Surface Burning:

Meets the requirements of ASTM E-84-08 and E-84-15a

Smoke and Toxic Fume Emission:

Zodiak® Ceiling units are zero rated for smoke and emission of toxic fumes, also it doesn't contain organic ingredients.

Flame Spread and Smoke Density:

Zodiak® Tiles are Tested in accordance with ASTM Designation E84-97a, "Standard Method of Test for Surface Burning Characteristics of Building Materials", Zodiak® tiles achieved a flame spread and smoke density value of 0 (nil) equaling NFPA Class A and UBC Class 1

Humidity

Tested in an atmosphere of 95% RH at 21 deg. C for 14 days, the tiles did not sag or distort and showed only minimal increase in weight

Flexural Strength

Standard procedures of BS EN 14246:2006 was applied on the specimens, with a load of 6000g applied, No break or Crack were observed.

Thermal Conductivity:

Standard procedure of ASTM C 518 and EN ISO 6946:1997, ACI 122R was applied for the Thermal conductivity test.

Acoustic Features:

Sound absorption:

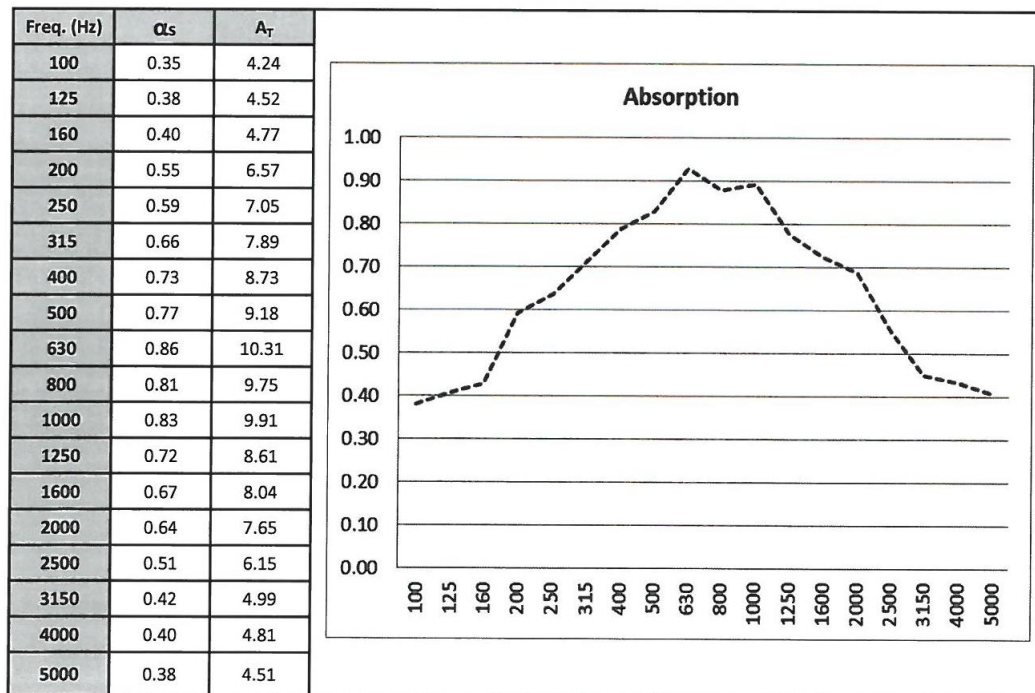
- High performance perforated Zodiak® Ceiling units (CAIRO) are able to achieve very high levels of Noise Reduction coefficient (up to NRC 0.86) compare to the other

acoustical products in the market, where can be used mainly in crowded areas for noise reduction purposes.

Spatially-averaged measurement data is presented below –

Frequency, Hz	100	125	160	200	250	315	400	500	630
Mean reverberation time T1 (without Sample)	2.26	3.58	4.28	5.31	5.83	6.32	6.54	6.2	5.33
Frequency, Hz	800	1000	1250	1600	2000	2500	3150	4000	5000
Mean reverberation time T1 (without Sample)	4.44	4.53	4.41	4.06	3.8	2.89	2.84	2.82	2.48

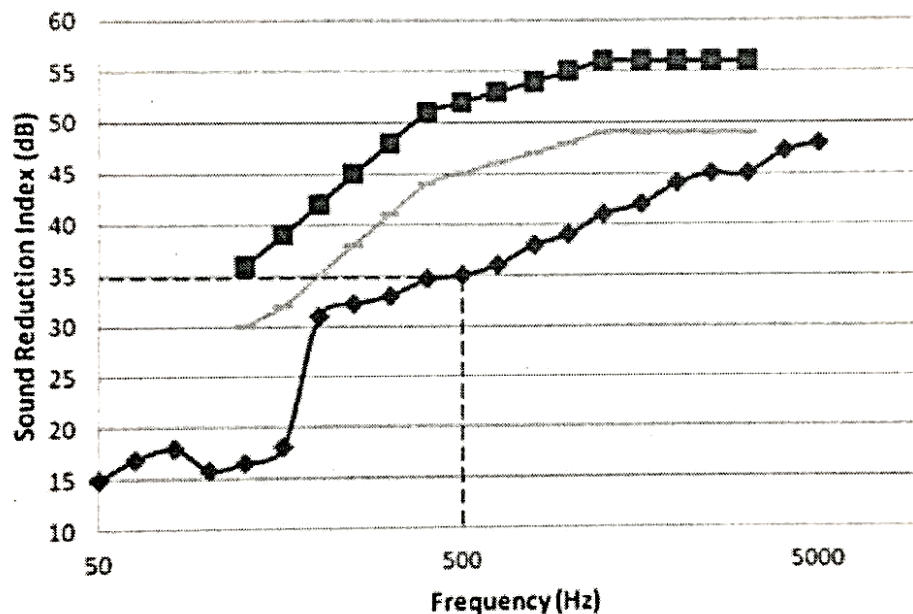
Frequency, Hz	100	125	160	200	250	315	400	500	630
Mean reverberation time T2 (with Sample)	1.8	2.5	2.77	2.75	2.78	2.71	2.59	2.46	2.16
Frequency, Hz	800	1000	1250	1600	2000	2500	3150	4000	5000
Mean reverberation time T2 (with Sample)	2.06	2.06	2.19	2.17	2.14	1.96	2.06	2.07	1.91



Sound Reduction

High performance Semi-perforated Zodiac® Acoustical Ceiling units (ZODIAK Acoustical) have confirmed Sound Transmission Coefficients (STC) of 38 (at 500 Hz) using proper partition head seals (Available in 6 different Decorative patterns).

As per EN ISO 10140-1:2006-Acoustics
EN ISO 717-1:1996+A1:2006-Acoustics



Biological:

Zodiak® cares for quality of life. Its fabrication does not cause any pollution, it does not contain asbestos or toxic elements and its characteristics (fire resistance, free from chemicals, hygrometric regulator, acoustic absorption, etc.) are elements which ensure utmost comfort, health and security.

Zodiak® tiles will not support the growth of bacteria or other microorganisms, it is:

- Environment friendly.
- Doesn't cause pollution.
- Free of Asbestos and toxic elements
- Free of chemical
- Anti-bacteria Pre-painted surface

Water vapor permeability:

When the intended use of gypsum ceiling tile is for moisture diffusion control, a waterproof coating will be required.

Lifespan:

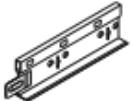



Under normal conditions, Zodiac® Ceiling tiles will not deteriorate and can last for the lifetime of the building.

Transport, handling & storage:

Zodiac® Ceiling units are shrink-wrap supplied or packed in cardboard cartons. Cartons should be stacked in the vertical position only, never flat; the stack should be a maximum of 3 high. Similarly, tiles should be stacked vertically when waiting fixing.

Installation:

- the tiles are designed for installation on a standard 24mm and exposed metal T-Grid suspension systems.
- Grid Hanging centers depend on the weight of tiles used and will be specified by the grid manufacturer; the recommended dimension should be strictly followed.

24mmTee System		Profile	Profile Height	Component Length '1
	Main Tee		38mm	3600mm
			38mm	3600mm
			38mm	3600mm
			38mm	3600mm
	Cross Tee		38mm	1200mm
			38mm	1200mm
			38mm	600mm

Cutting:

Tiles can be easily cut on site using a carpenter's fine tooth saw; the tiles should be placed face up on a flat, clean surface for cutting.

Access:

Lay-in tiles are easily removed at any time by simply lifting them out, thus providing excellent access to services etc. installed in the ceiling void.

Maintenance:

Clean the Zodiac® Ceiling tiles with a slightly damp cloth or, tiles can even be washed in a bath using a mild detergent solution.

Remark: the technical data sheets and the laboratory test certificates are available upon requirement,





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